this building was contributed by: IBUS, Germany

BOTAG - Building

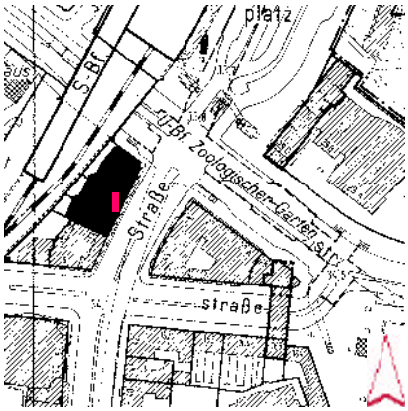
Berlin, Germany
52,5°N, 13,2°E
predominantly cloudy

commercial, mixed use

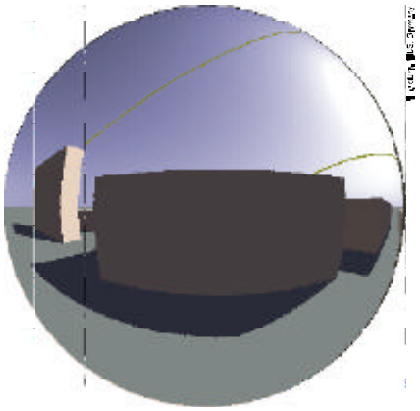
exterior shield of tinted glass to reduce cooling loads

building

The BOTAG-building represents the architectural style of the late 1960's - it is totally air-conditioned. The facade is cladded with dark anodized aluminum panels. The ground floor and the second floor is used for commercial purposes, the upper stories accommodate offices.



The building is situated at a corner of two major roads in the center of Berlin.



This fisheye picture shows the obstruction as it was when the building was erected.

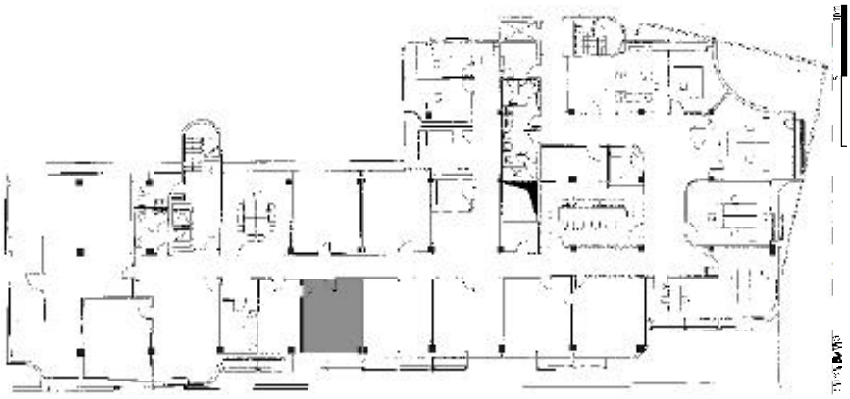
daylight strategy

One specific feature of the BOTAG-building are the high reflective tinted glass panels which are suspended from the maintenance balconies. They act as fixed shading devices to reduce cooling loads. Because these fixed elements constantly reduce daylight without regard to the position of the sun, they affect the performance of the daylight strategy. Despite considerable reduction of daylight by these elements, they do not satisfactory protect the user from glare through direct sunlight. Therefore movable vertical blinds have been installed on the interior as well. Compared to the general daylight potential of a 5 m deep office space, this additional shading system restricts the daylight penetration considerably.

South facade of the BOTAG-Building. The facade is cladded with dark brown anodized aluminum panels. The exterior layer of glazed shields serves to reduce cooling loads, it reduces daylight penetration as well.

office

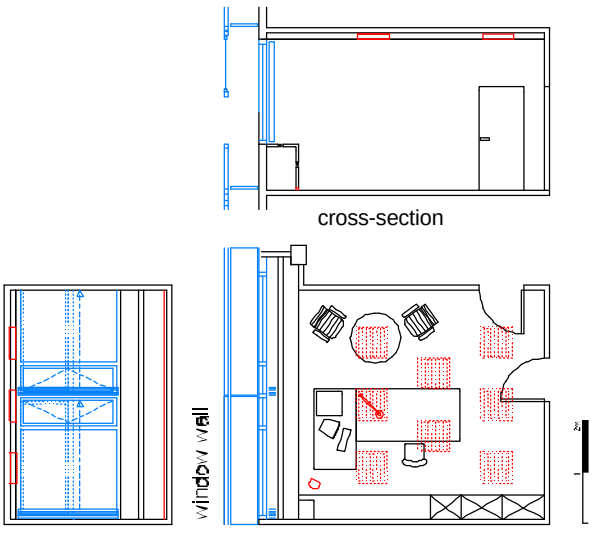
The room recorded is a cellular office; most installations including the cavities for supply air and return air are placed in a spacious duct of 0,6 m depth below the sill. The survey among users showed, that in identical rooms people use the artificial light differently. Some user switch on the lights every day when they enter their office disregarding the amount of daylight. Others switch on the artificial light only when it is needed.



Fifth floor of the BOTAG-Building, the regular structure of supporting members is antipodal to the chaotic floor layout and the irregular shape of the building.

Office equipped with vertical blinds, the fixed glazed screen restricts the view of the sky from the desk, while still lacking to protect from glare through direct sunlight.

Facade seen from the workplace; the windows are operable to serve as fire escape, they are not used for ventilation.



cross-section

plan

building data

size	7 000 m²
number of stories	7
architect	R. Ahlborn & Partner
year of completion	1980

office room

daylight strategy	unilateral, sidelighting
dimensions (depth/width/height)	5,3 m / 4,4 m / 3,0 m
room area	23,4 m²
floor	carpet, 13%
wall	painted wall paper 88%
door	coated timber, 64%
ceiling	styrene board, 70%
table	coated timber, 58%
window sill, parapet	enamel paint 50%
window frame	anodized aluminum, 7%
east facing window	double clear glazing
glazing of sunscreen	single gray tinted reflective glazing
lamp types	fluorescent lamps
installed power density	25 W/m²
control strategy	manual switching

facade		east facade
data	orientation	110°
	glazed area	8,5 m²
	opening index	0,64
function	daylighting	●
	view outside	●
	ventilation	–
	operable	–
	shading	●
	redirection	–

systems		glazed sunscreen	maintenance balcony	vertical lamellas
function	sun shading	●	●	–
	glare protection	◨	◨	●
	redirection	◨	◨	–
location	inside	◨	◨	●
	window pane	◨	◨	–
	outside	●	●	–
	movable	–	–	●
	fixed	●	●	–